

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Dynan et al.

Serial No.: Not Assigned Yet

Filed: Herewith

Confirmation No.:

Group Art Unit:

Examiner:

Attorney Docket No.: 791301-1010

Client Ref. No.: 007-04

For: Compositions and Methods for Modulating DNA Repair

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This information disclosure statement is filed in accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98, and specifically:

- ☒ under 37 CFR 1.97(b), or
(within Three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement Under 37 C.F.R. 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97(b) time period, but before the final office action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with a:
☐ Statement under 37 CFR 1.97(e), and
☐ a \$180.00 petition fee set forth in 37 CFR 1.17(p).
(Filed after final office action or notice of allowance, whichever occurs first, but before payment of the issue fee)

At any time during the pendency of this application, please charge any fees required to Deposit Account 20-0778 pursuant to 37 CFR 1.25. The Commissioner is hereby requested to credit any overpayment to Deposit Account No. 20-0778.

- ☒ Applicant(s) submit herewith *Form PTO 1449A - Information Disclosure Statement by Applicant* together with copies (where required) of non-U.S. patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may or may not be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56. As required by 37 C.F.R. §1.98(a), a legible copy of each non-U.S. document is provided.
- ☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on the form PTO 1449 and is enclosed herewith.

The following rights are reserved by the Applicant(s): the right to establish the patentability of the claimed invention over any of the listed documents should they be applied as reference, and/or the right to prove that some of these documents may not be prior art, and/or the right to prove that some of these documents may not be enabling for the teachings they purport to offer.

This statement should not be construed as a representation that an exhaustive search has been made, or that information more material to the examination of the present application does not exist. Any statements or identifications regarding the relevance of any portion(s) of cited references should not be construed as a representation that the most relevant portion(s) have been identified, and the absence of such statements or identifications should not be construed as representations that there are no relevant portion(s). The Examiner is specifically requested not to rely solely on the materials submitted herewith. The Examiner is requested to conduct an independent and thorough review of the documents, and to form independent opinions as to their significance.

It is requested that the information disclosed herein be made of record in this application and that the Examiner initial and return a copy of the enclosed PTO-1449 to indicate the documents have been considered.

Respectfully Submitted,

**THOMAS, KAYDEN, HORSTEMEYER
& RISLEY, L.L.P.**

By:



Charles Vorndran, Reg. No. 45,315

100 Galleria Parkway, Suite 1750
Atlanta, Georgia 30339-5948
770-933-9500

Form PTO-1449				Attorney Docket No. 791301-1010 Client Ref. No.: 007-04		Serial No. Not Assigned Yet		
INFORMATION DISCLOSURE CITATION				Applicant Dynan et al.				
(Use several sheets if necessary)				Filing Date Herewith		Group N/A		
U.S. PATENT DOCUMENTS								
Examiner Initials	Item	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	1	6,207,153	3/27/01	Dan et al.	424	138.1	5/22/97	
	2	6,468,547	10/22/02	Buchsbaum et al.	424	277.1	2/7/00	
	3							
	4							
	5							
FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	6	WO 01/75110	10/11/2001	PCT			x	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)								
	A1	Adams, G.P., Brechbiel, M.W., Chappell, L.L. et al. (2000) Radioimmunotherapy of established solid tumor xenografts with alpha and beta emitter-conjugated anti HER2/neu single-chain Fv (scFv) and disbody molecules. Cancer Biotherapy & Radiopharm. 15(4), 402.						
	A2	Bilbao, G., Contreras, J.L., Curiel, D. (2002) Genetically engineered intracellular single-chain antibodies in gene therapy. Mol Biotech., 22(2), 191-210.						
	A3	Cattaneo, A. and Biocca, S. (1999) The selection of intracellular antibodies. TIBTECH.; 17, 115-121						
	A4	Cochet, O., Kenigsberg, M., Delumeau, I. et al. (1998) Intracellular expression and functional properties of an anti-p21-Ras scFv derived from a rat hybridoma containing specific and irrelevant kappa light chains. Mol Immuno. 35(17), 1097-1110.						
	A5	Flynn, A.A., Begent, R.H., Bhatia, J. et al. (2002) Antibody and radionuclide characteristics and the enhancement of the effectiveness of radioimmunotherapy of selective dose delivery to radiosensitive area of tumour. Intl Journal of Rad Bio. 78(5), 407-415.						
	A6	Izzard, R.A., Jackson, S.P., Smith, G. (1999) Competitive and Noncompetitive Inhibition of the DNA-dependent Protein Kinase. Cancer Research. 59, 2581-2586.						
	A7	Jafri, F., Hardin, J.A., Dynan, W.S. (2001) A method to detect particle-specific antibodies against Ku and the DNA-dependent protein kinase catalytic subunit in autoimmune sera. Journal of Immunological Methods. 251, 53-61.						
	A8	Vaganay-Juéry, S., Muller, C., Marangoni, E. et al. (2000) Decreased DNA-PK activity in human cancer cells exhibiting hypersensitivity to low-dose irradiation. British Journal of Cancer. 83(4), 514-518.						

A9	Khare, P.D., Liao, S., Hirose, Y. et al. (2002) Tumor growth suppression by a retroviral vector displaying scFv antibody to CEA and carrying the iNOS gene. <i>Anticancer Res.</i> 22, 2443-2446.	
A10	Kurimasa, A., Kumano, S., Boubnov, N. et al. (1999) Requirement for the Kinase Activity of Human DNA-Dependent Protein Kinase Catalytic Subunit in DNA Strand Break Rejoining. <i>Molecular and Cellular Biology.</i> 19(5), 3877-3884.	
A11	Li, S., Takeda, Y., Wragg, S. et al. (2003) Modification of the ionizing radiation response in living cells by an scFv against the DNA-dependent protein kinase. <i>Nucleic Acids Research.</i> 31(20), 5848-5857.	
A12	Peng, Y., Qinming, Z., Hatsumi, N. et al. (2002) Silencing Expression of the Catalytic Subunit of DNA-dependent Protein Kinase by Small Interfering RNA Sensitizes Human Cells for Radiation-induced Chromosome Damage, Cell Killing, and Mutation. <i>Cancer Research.</i> 62, 6400-6404.	
A13	Sak, A., Stuschke, M., Wurm, R., Schroeder, G. et al. (2002) Selective Inactivation of DNA-dependent Protein Kinase with Antisense Oligodeoxynucleotides: Consequences for the Rejoining of Radiation-induced DNA Double-Strand Breaks and Radiosensitivity of Human Cancer Cell Lines. <i>Cancer Research.</i> 62, 6621-6624.	
A14	Wels, W., Moritz, D., Schmidet, M. et al. (1995) Biotechnological and gene therapeutic strategies in cancer treatment. <i>Gene.</i> 159(1), 73-80.	
A15	Takata, M., Sasaki, M.S. et al. (1998) Homologous recombination and non-homologous end-joining pathways of DNA double-strand break repair have overlapping roles in the maintenance of chromosomal integrity in vertebrate cells. <i>The EMBO Journal.</i> 17(18), 5497-5508.	
A16	Yoo, S. and Dynan, W. (1999) Geometry of a complex formed by double strand break repair proteins at a single DNA end: recruitment of DNA-PKcs induces inward translocation of Ku protein. <i>Nucleic Acids Research.</i> 27(24), 4679-4686.	
A17	Koike, M., Awaj, T., et al. (1999) Differential subcellular localization of DNA-dependent protein kinase components Ku and DNA-PKcs during mitosis. <i>Journal of Cell Science.</i> 112, 4031-4039.	
A18	Sonoda, E., Takata, M., et al. (2001) Homologous DNA recombination in vertebrate cells. <i>PNAS.</i> 98(15), 8388-8394.	
A19	Chan, D.W., Ping-Chi Chen, B. et al. (2002) Autophosphorylation of the DNA-dependent protein kinase catalytic subunit is required for rejoining of DNA double-strand breaks. <i>Genes & Development.</i> 16, 2333-2338.	
A20	http://biomeda.com/site/cat/V10101/specsheet.html Biomedia – V10101-DNA-Pkcs (Monoclonal Antibodies) 2/17/04	
A21	http://www.lbl.gov/lifesciences/labs/chen_lab.html Life Sciences Division – Cell & Molecular Biology – Chen Lab 2/17/04	
A22	Morgan, D.O. and Roth, R.A. (1988) Analysis of intracellular protein function by antibody injection. <i>Immunology Today.</i> 9(3), 84-88.	
A23	Carter, T., Vancurova, I., et al. (1990) A DNA-Activated Protein Kinase from HeLa Cell Nuclei. <i>Molecular and Cellular Biology.</i> 10(12), 6460-6471.	
A24	Gao, Y., Chaudhuri, J., et al. (1998) A Targeted DNA-PKcs-Null Mutation Reveals DNA-PK-Independent Functions for KU in V(D)J Recombination. <i>Immunity.</i> 9, 367-376	
A25	Taccioli, G., Amatuucci, A., et al. (1998) Targeted Disruption of the Catalytic Subunit of the DNA-PK Gene in Mice Confers Severe Combined Immunodeficiency and Radiosensitivity. <i>Immunity.</i> 9, 355-366.	
A26	Gottlieb, T. and Jackson, S.P. (1993) The DNA-dependent protein kinase: requirement for DNA ends and association with KU antigen. <i>Cell.</i> 72, 131-142.	
A27	Pastink, A., Eeken, J., et al. (2001) Genomic integrity and the repair of double-strand DNA breaks. <i>Mutation Research.</i> 37-50.	

	A28	Eun Lee, S., Mitchell, R.A., et al. (1997) Evidence for DNA-PK-Dependent and –Independent DNA Double-Strand Break Repair Pathways in Mammalian Cells as a Function of the Cell Cycle. Molecular and Cellular Biology, 17(3), 1425-1433.
* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.		
EXAMINER'S SIGNATURE:		DATE CONSIDERED:
Patent and Trademark Office; U. S. DEPARTMENT OF COMMERCE		